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C.F.T.R.I., MYSORE

cks from Inferior Soils and Fly Ash

roducing bricks, conforming to Standards specifications, from r red murum and black soils of gundam area of Andhra Pradesh ntral Building Research Institute), Roorkee, has worked out a s. It consists in mixing with the -40% fly ash and 0.3-0.4% (by wt) mmon salt, followed by firing in 1020°C range, and docking. The ss has been adopted by local brick facturers, who have manufactured 12-lakh bricks and are supplying to the National Thermal Power oration Ltd and other public and te undertakings for civil con- ion works. The Super Thermal r Project at Ramagundam alone ages a requirement of more than million bricks for constructing a ship in the area. The CBRI process esulted in a saving of 2 tonnes of per lakh of bricks.

is significant that whereas the tional bricks of Ramagundam area a poor strength of less than 25 n^2 and water absorption of 20-25%, lime bursting, and crack during g, bricks manufactured in accor- e with the CBRI process possessed 0 kg/cm^2 strength and 12-15 % r absorption, and did not develop kage cracks. □

RI Designs Creteways for Flood-prone Rural Roads

Central Road Research Institute RI), New Delhi, has developed a gn of creteways, consisting of two ks made with cement concrete cks, 90 cm wide, 60 cm long and 10 cm thick, the slabs in each track being interconnected with mild steel dowel bars. Clear spacing between the two tracks of creteway is 75 cm. The creteways are intended for light rural traffic of bullock carts, tractors, jeeps, etc. as well as for occasional passage of buses and trucks.

Where needed, depending on sub-grade and moisture conditions, these creteways are to be laid over low-cost semi-rigid sub-bases such as lime-fly ash stabilized soil, and lean cement-fly ash concrete. They can be used at locations subject to flooding but not prone to scour. They lend themselves to easy repair and replacement, and any dislocation occurring under floods can be easily rectified after the floods recede. A special advantage of this technique is that the blocks can be removed and reused where the alignment is required to be changed as a flood control measure or after finalization of cross-drainage works.

The Haryana State Public Works Department has recently taken up construction of an experimental section of such creteways in the flood-prone Khadar area in Jamuna basin in the Panipat Division, with technical assistance from CRRI. On successful completion of the experimental section, the department proposes to lay some 60-70 km of such creteways. □

Dr P.N. Mukherjee Wins Senior Coal Scientist Award

Dr P.N. Mukherjee of the Central Fuel Research Institute, Dhanbad, has been named (jointly with Prof. D. Chandra of Indian School of Mines, Dhanbad) for the Senior Coal Scientist Award for 1980. Instituted by the Union Ministry of Energy, the award is in recognition of meritorious research in coal science and technology.

Dr Mukherjee's contributions relate to the importance of moisture, which is held in coal by chemical forces, and the active sites responsible for retention of moisture—functional groups such as hydroxyl and carboxyl. His studies on humic acids from coal produced by mild aerial oxidation have indicated that the coal acids produced from different ranks of coal are identical in nature, thereby suggesting that the basic building units in different ranks of coal are more or less the same. He demonstrated, for the first time, that properties of polyelectrolytes exhibited by the humic acids are important from the standpoint of coal structure. Investigating the nature of links or groups which connect aromatic units in coal, Dr Mukherjee has established that the methylene groups as well as other linkages are involved.

Dr Mukherjee's work on preparation of fertilizers from coal by the reaction of coal and oxygen in a slurry of ammoniacal liquor and oxidation of lignite by dilute nitric acid has led to processes for production of novel coal fertilizers. His work has thrown light on

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the principle of catalyst selection for the low-temperature shift reaction. Currently Dr Mukherjee is studying the role of coal in the future energy pattern of the country and with the prospects of use of coal as the principal feedstock for the production of chemicals either through utilization of byproducts of coal carbonization or by physical and chemical transformation of coal.

Dr Mukherjee (born 1924) has had a brilliant academic career in Dacca and Calcutta universities and obtained M.Sc. in applied chemistry and D. Phil. from the latter. Starting his research career at the Indian Institute of Science, Bangalore, in 1947, he joined CFRI in 1949. Dr Mukherjee's research during early years was concerned with the physico-chemical properties of coal and its degradation products. Subsequently his major field of research was adsorption, surface chemistry, and heterogeneous catalysis. He has more than 70 research papers and 6 patents to his credit. □

Biochemical Studies on Adult and Developmental Stages of Avian and Human Ascaris

Shri Shiva Kant Mishra of the Biochemistry Division of the Central Drug Research Institute, Lucknow, has carried out studies on biogenic amines, their metabolites and monoamine oxidase (MAO) in various developmental stages and adults of *Ascaridia galli* (chick ascarid) and *Ascaris lumbricoides* var. *hominis* (human ascaris). He has also studied the status of trypsin and chymotrypsin inhibitors and certain important enzymes of carbohydrate metabolism in developing eggs of the two parasites. A polysaccharide-protein complex which possesses skin-sensitizing allergenic activity has been prepared from *A. galli* which can be used for serodiagnosis of this parasitic infestation in man.

The biogenic amines, 5-hydroxytryptamines (5-HT), histamine (Hm), norepinephrine (NE) and dopamine (DA), which are involved in neuromuscular transmission, were estimated in different anatomical parts of human and chick ascarids. The concentration of 5-HT was maximum in body wall, male and female reproductive organs and intestines, whereas DA and Hm were highest in female reproductive organs and intestines respectively. Amine content of human ascaris was higher than that of chick ascaris. A progressive increase in 5-HT and Hm contents was observed from unembryonated egg to infective larval stage and the increase in 5-HT was higher than in Hm. Those anatomical parts that are rich in 5-HT also showed a higher concentration of its metabolite 5-hydroxyindoleacetic acid (5-HIAA).

Tissues of both parasites contained mitochondrial active MAO, and the observed low levels of 5-HIAA in chick parasite point to weak MAO activity. Detailed kinetic and inhibition studies were carried out with mitochondrial MAO.

Inhibitors of trypsin and chymotrypsin were detected in different developmental stages of the parasites. Unembryonated egg showed higher tryptic and chymotryptic activity than infective larval stage. Glycogen phosphorylase, lactate dehydrogenase and succinate dehydrogenase activities increased from the unembryonated egg to infective larval stage, whereas phosphofructokinase did not change significantly.

A skin-sensitizing allergen from *A. galli* was purified partially and with a view to using it for serodiagnosis of this helminthic infestation; guinea pig was used as a model for exploring the detailed nature of this *A. galli* allergen.

Shri Mishra, who conducted the studies under the guidance of Dr S.K. Ghatak, was awarded Ph.D. degree by the Kanpur University for his thesis based on the studies. □

Chemical, Structural & Metabolic Studies in Filariasis

Despite the challenges faced in the design of new drugs against human and animal filariasis, little attention has so far been paid to the understandin anatomy, physiology and biochem events occurring in filarial parasite well as the metabolic disorders generate in the host. Hence, Shri A Srivastava of the Biochemistry Divis of the Central Drug Research Insti (CDRI), Lucknow, has studied para biochemistry, host-parasite relations and the effect of a compound synt sized at the institute on parasite and h enzymes.

The bovine filarids were successfu maintained *in vitro* as well as *in vivo* rats. A suitable number of adult m and female parasites were transplan intraperitoneally in albino, hooded a multimammate rats and their survi and release of microfilariae w studied. Multimammate rats w found most suitable for experimen studies as the rate of infection was mu lower in the other two varieties and th developed immunity against the pa sites more easily.

Some of the effects of microfilaraem are : (1) A significant decline in t activities of microsomal drug metabol ing enzymes, viz. aniline hydroxyla and aminopyrine demethylase, w observed during the period of infectio this may indicate disorganization of t microsomal system or decline in t synthesis of these enzymes, or both. (Arginase, an important enzyme of t urea cycle, recorded a two-fold increa in serum but it was significantly reduc in hepatic tissue. (3) Diseased anima showed high SGOT/SGPT ratio.

Adult filarids usually require high amounts of carbohydrates and als utilize amino acids from the medium t incorporate them into protein. Glucos stimulated the incorporation of exo genous amino acids. The requirement o an ATP-generating system, utilizatio of amino acids, transfer of amino acid from sRNA as noted through it inhibition by puromycin, and micro somes exhibiting highest amino aci incorporation rate suggest that protei synthesis in this parasite compare favourably with that in other eukaryoti organisms.

e effects of centperazine, a com-
d synthesized at CDRI (and coded
5), on the filarids were studied. The
se of microfilariae (mf) was severely
ed within two hours of incubation
the compound. It also inhibited the
poration of glucose and synthesis
lycogen. Protein-synthesizing ca-
y was also blocked by this
pound at 0.5 m*M* conc. A
ficant inhibition of RNA synthesis
observed in *Setaria cervi* when the
worms were preincubated with 5-
M conc. of centperazine. There was
plete disappearance of mf from
pheral circulation after adminis-
on of the drug at 100 mg/kg ip dose
5-8 days in multimammate rats.
ied smears of liver and spleen
ved decreasing concentration of
t mf within 4 hr after treatment.
reduction of mf in circulation was
mpanied with the occurrence of
obile mf in liver and attachment of
to these mf. Although mf in liver
surrounded by polymorphonuc-
eosinophils following centperazine
tment, their fate has not been
perly understood. But this cell-
esion is considered to be an
ortant phenomenon in the microfi-
idal action of centperazine.

hri Srivastava, who carried out the
lies under the guidance of Dr S.
tak of the same division, was
rded Ph.D. degree by the Kanpur
versity for his thesis based on the
lies. □

Chemistry of Trivalent Iodine and Oxygenation of Aromatic Compounds

'*meta*-acetoxylation' taking place in
reaction of acetanilides with
nyliodose acetate has been known
a long time, and diverse mechanisms
e been suggested for the reaction, the
st being the one involving a
ightforward electrophilic substi-
on. Since there were grounds for
pecting the soundness of this
chanism, the problem was rein-
tigated by Shri P.B. Kokil, a research fellow, who worked in the Organic Chemistry Division of the National Chemical Laboratory (NCL), Pune.

The study has shown that the actual reaction path is quite different and more complex, involving cyclohexadienone-imine intermediates. The results of a parallel study on some *p*-substituted phenols and *N*-alkyl anilines have confirmed the conclusions regarding the reaction mechanism. In the acetoxylation, the acetoxyl group enters the aromatic ring not as an electrophile but as a nucleophile. The possibility of a new method of preparing mono-esters of hydroquinone is suggested by some of the results.

A new, and hitherto unknown, series of iodonium ylids, some of them in pure state, have been obtained from some phenols, and some of their properties studied. They rearrange readily, on heating, to 2-iododiphenyl ethers. These compounds are of interest because of their potential anti-cancer activity.

Shri Kokil, who carried out the work under the guidance of Dr P.M. Nair, was awarded Ph.D. degree by the Shivaji University, Kolhapur, for his thesis based on the studies. □

International Symposium on Landslides: Proceedings

The proceedings of the International Symposium on Landslides (New Delhi, April 1980), sponsored, among other institutions, by the Central Road Research Institute, Central Building Research Institute and CSIR's Civil Engineering & Consultancy Services, have been published in three volumes. The latest volume published (Vol. 3) contains panel and floor discussions of six technical sessions, and proceedings of the inaugural and concluding sessions.

Volume 1 contains research papers contributed to the symposium, and Vol. 2 contains state-of-the-art reports on subjects related to landslides.

The symposium discussed geological and seismological factors, properties of materials, theoretical approaches, and instrumentation and control measures to prevent occurrence of landslides.

The proceedings of the symposium form an exhaustive document containing the latest developments in the field of control of landslides and will be valuable to engineers and researchers engaged in this area. □

Health Effects of Toxic Metals: A Bibliography

A bibliography of Indian work on health effects of toxic metals has been brought out (mimeograph form) by the Industrial Toxicology Research Centre (ITRC), Lucknow. Covering literature from 1934 through 1980, the bibliography contains 733 references arranged under broad headings: Air, water and soil, pollution; Effects on man, children, mammals, fish and plants; Legislation; Therapeutic use; Analytical methods; Chemistry & technology; etc. Includes subject and author indexes. Compilers: R.R. Khan, S.N. Agarwal & Usha Nigam. Unpriced, the bibliography may be obtained by writing to: The Director, ITRC, P.B. 80, Lucknow 226 001. □

Air Quality in Indian Cities

Air quality data for ten metropolitan areas (Ahmedabad, Bombay, Calcutta, Cochin, Delhi, Hyderabad, Jaipur, Kanpur, Madras, and Nagpur) for the years 1978 and 1979 have been presented in a report brought out by the National Environmental Engineering Research Institute (NEERI), Nagpur. Parameters selected for monitoring air quality were: concentration of suspended particulate matter, of sulphur dioxide, sulphation rate, concentration of nitrogen oxides, and dust fall. The preliminary results of the continuing study show that Indian metropolitan areas are beginning to experience the serious effects of air pollution, as have the cities of more developed countries experienced.

The work, under way since 1978, is expected to continue on a long-term basis, initially as a five-year programme. The data, summarized in 128 tables and

56 illustrations, are valuable from the point of view of environmental impact of industrialization and urbanization and the degree of abatement and control measures required.

Published under the title 'Air Quality in Selected Cities in India (1978-1979): National Air Quality Monitoring Network', the report (demy 4 to,226 pp.) is available from the Director, NEERI, Nagpur 440 020. □

Bibliography on Mica

A two-volume (mimeographed) Bibliography on Mica has been brought out by the Central Glass & Ceramic Research Institute (CGCRI), Calcutta. Volume 1 contains 1329 references covering the period 1960-1969, and the second volume covers 1970-1979 with 1984 references. Entries are arranged alphabetically by authors' names, different works of the same author being arranged chronologically and works of different authors being shown with the first author. A keyword index is included in each volume. Compilers: B.K. De Sarkar & S.K. Bandyopadhyay of CGCRI's Documentation Unit. For copies (unpriced) one may write to: The Director, CGCRI, Calcutta 700 032. □

PROGRESS REPORTS

RRL-Bhubaneswar
Annual Report: 1980-81

Thirty-eight R&D projects spread over nine disciplines were investigated during 1980-81 by the Regional Research Laboratory (RRL), Bhubaneswar, according to its annual report published recently. Eleven of the projects were sponsored/collaborative projects, and three were all-India coordinated projects.

With a view to harnessing sea-bed mineral resources, especially because the land resources are getting fast depleted, this laboratory has taken up in collaboration with the National Institute of Oceanography mineralogical and beneficiation studies of off-shore minerals of the Indian coast. The studies have shown that the off-shore sediments of Ratnagiri area of western coast contain appreciable quantities of valuable minerals of vanadium and titanium which could be beneficiated and utilized.

The laboratory completed a sponsored project on the beneficiation of low-grade siliceous chromite ore from Boula region of Orissa and submitted a report to Ferro Alloys Corporation Ltd, the sponsor. The ore sample could be beneficiated by a simple process consisting in open-circuit grinding to 80% passing size of 300 μm, desliming and single-stage tabling to obtain a product containing $>48\%$ Cr_2O_3 and $<8.0\%$ SiO_2, with an overall chromite recovery of about 70%. The corporation is expected to set up a commercial plant in Orissa on the basis of the results. In another project, sponsored by Orissa Mining Corporation, the laboratory beneficiated by a similar procedure a low-grade ferruginous chromite ore with low silica from Sukerangi area of Orissa. The beneficiated concentrate contained $>52\%$ Cr_2O_3 and $<2\%$ SiO_2, with chrome recovery of $>70\%$. The sponsor of this project is also expected to set up a commercial plant based on the process. The concentrates could find use in the production of chrome magnesite refractories.

Pilot plant scale studies on the production of manganese ore sinters and their effect on the performance of electrical furnaces for the production of ferromanganese were carried out in collaboration with the Mineral Development Board. Good sinters possessing a shatter index of 75-85%, tumbler index of 55-70% and abrasion index of 7-14% were obtained. Based on the results, the design for a 50 tonnes/day manganese ore pan-sintering plant and specifications for various equipment were supplied to Ferro Alloys Corporation Ltd, the sponsor.

A project of considerable importance taken up by the Special Materials Group under the sponsorship of the Department of Science and Technology is the production of silicon suitable photovoltaic applications starting fr metallurgical-grade silicon by hot-m solvent extraction and directio solidification. Experimental setups solvent refining furnace, slag refin furnace and directional solidificat unit were designed, fabricated a commissioned.

Another project of significa against the background of energy cr is pipeline transportation of ores a minerals in slurry form, a mode chea than rail or road transport. collaboration with Engineers India L the laboratory is setting up a pilot pla facility of 200 m long test loops different diameters (11, 25, 50, 100 & 1 mm).

Following the successful completi of the project on development reformation catalysts, sponsored by t Indian Petrochemicals Corporati Ltd, the laboratory entered into t second phase of work—preparation carrier-grade alumina through pr cipitation from homogeneous solutio and impregnation of platinum on to

As part of an ICAR-CSIR coord nated project, a process was develope for isolation of hecogenin from was sisal juice in about 0.1% yield an containing tigogenin in acceptable limi for further conversion to other life saving drugs.

Large-scale extraction of solasodin from *Solanum khasianum* [RRL(B) Y14 variety] was in progress under project sponsored by Industria Promotion & Investment Corporatio of Orissa Ltd.

A process on the production o battery-grade manganese dioxide fron ferromanganese slag was referred to th National Research Developmen Corporation of India for commercializ ation. Seven other processes wer released to industries. Twenty-seve research papers were published an three patents were filed. The budget o the laboratory for 1980-81 was about R 90 lakh. □

SIR Research Committees Reconstituted

esearch committees of the Council entific & Industrial Research, nine , have been reconstituted with from 1 April 1981 for a period of years. The membership of the stituted committees is given below.

OCHEMICAL & MICROBIOLOGY RESEARCH COMMITTEE

K.K.G. Menon (*Chairman*)
earch Director, Hindustan Lever Research tre, Chakala, Andheri (East), bay 400 099

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f Executive, Bengal Immunity Co. Ltd, 153 n Sarani, Calcutta 700 013

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search Division, Alembic Chemical Works Ltd, Alembic Road, Baroda 390 003

A.K. Maiti
airman, Centre for Neuro Sciences & Head, pt. of Physiology, Dr B.C. Roy Postgraduate titute of Basic Medical Sciences, Calcutta iversity, 244-B, Acharya J.C. Bose Road, lcutta 700 020

ad, Extramural Research
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nvener)

BIOLOGICAL RESEARCH COMMITTEE

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No. 10, Aboli Apartment, Opp. Law College, Pune 411 004

3 Prof. V.S. Ramadas
Head, Department of Botany, S.V. University, Tirupati 517 502

4 Prof. H.Y. Mohan Ram
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5 Dr C.K. Atal
Director, Regional Research Laboratory, Jammu 180 001

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7 Head, Extramural Research
CSIR, Rafi Marg, New Delhi 110 001
(*Convener*)

PERSONNEL NEWS

Appointments/Promotions

Shri V.K. Selot

Shri V.K. Selot has been appoin Scientist EI at the National Chemi Laboratory, Pune (9 March 1981). S Selot (born 17 July 1941) obtained B.E. degree in mechanical engineeri from the College of Engineering a Technology, Raipur, of Saug University in 1963. Prior to joini NCL, he was Design Engineer with t Heavy Engineering Corporation (HE Ranchi. While at HEC he visited US in 1974 for a year to receive specializ training in machine design and co oven plants.

Dr P. Ratnasamy

Dr Paul Ratnasamy, Scientist EI, of t National Chemical Laboratory (NC Pune, has been promoted to the positi Scientist EII (5 March 1981).

Dr Ratnasamy (born 11 June 19 obtained his Ph.D. from Loyo

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e, Madras, in 1967 for his
ch in heterogeneous catalysis.
ding to USA, he worked as
ch associate at Clarkson College
chnology, New York, where his
f interest was acid-base catalysis.
he was at the Laboratoiro de
ochimie Minerale, Louvain,
m, making a structural study of
cracking, reforming and hydro-
hurization catalysts. In 1972 he
the Indian Institute of Petroleum
Dehra Dun. Here he was project
inator concerned with work on
ha reforming and hydrode-
urization.

h NCL since 1979, Dr Ratnasamy
gaged in the synthesis, physico-
cal characterization and eva-
n of catalytic properties of metal-
d zeolites. He has published more
40 research papers, and taken out
l patents covering work on
opment of catalysts for alkylation,

ring 1976-77 Dr Ratnasamy was
nder von Humboldt Visiting
ssor at the Institute of Physical
istry, Munich, FRG. He is a
ber of the Indian Chemical Society
f the Catalysis Society of India. He
a diploma in industrial adminis-
n and management of the British
ute of Commerce. □

* * *

her appointments at NCL include
of: Dr S.D. Prasad (as Scientist C;
March 1981); Dr A. Datta (as
tist C; 30 March 1981); Shri S.
topadhyay (as Scientist C; 13 Feb.
); Shri A. Bhattacharya (as Scientist
March 1981). □

* * *

omoted at NCL, Pune, are: Dr S.
inarayan (as Scientist C, 29 Jan.
); Shri B.K. Ghosh (as Scientist B, 8
1980); Dr (Smt) C. Mishra (as
ntist B, 21 Jan. 1981); Dr (Smt) M.
(as Scientist B, 21 Jan. 1981); and
S.R. Sainkar (as Scientist B, 4 Feb.
).

ri M.M. Sharma, Section Officer,
R Headquarters, New Delhi, has
promoted as Administrative Officer (Grade I) and transferred to NCL, Pune (9 March 1981). □

Honours & Awards

Prof. P.K. Jena, Director, Regional Research Laboratory, Bhubaneswar, has been elected a member of the editorial board of *Hydrometallurgy*, an international journal published by Elsevier Scientific Publishing Company, Amsterdam. □

* * *

Prof. P.K. Rohatgi, Director, Regional Research Laboratory, Bhopal, has been invited to be a contributing editor from India for *Asia* 2000, a pioneering futures research journal published from Hong Kong. He also featured in the maiden issue of the journal containing a debate on 'Technology change and future of Asia'. □

* * *

The Structural Engineering Research Centre (SERC) was awarded a certificate of merit as also the second prize for Government of India pavilions at the National Agricultural Fair held at the Punjab Agricultural University in April 1981. SERC had displayed its ferrocement structures for food grain storage and water tank, and biogas holder. Shri J.K. Vij of SERC was awarded a certificate of merit for excellent photo coverage of the fair. □

Deputation Briefs

Dr R.V. Chaudhari of the Chemical Engineering Division of the National Chemical Laboratory, Pune, visited West Germany under the CSIR-DAAD exchange of scientists programme from 1 December 1980 to 15 February 1981. He was at the Technische Chemie Institut of the University of Erlangen for a month and then visited several technical chemistry departments of several other laboratories. He gave lectures and held discussions with scientists working on homogeneous catalysis and reaction engineering. Dr Chaudhari also visited the Department of Chemical Engineering, University of Edinburgh, Scotland; and Technische Chemie Laboratory of Eidgenossische Technische Hochschule, Zurich, and delivered invited lectures. □

PATENTS INFORMATION

Indian Pat. 160/Del/77*

Process for production of electroformed copper foil

B.A. SHENOI, S.K. ROY, V. SIVAN & S. JOHN
Central Electrochemical Research Institute
Karaikudi

The process covered by the process facilitates peeling off of electroformed metal articles from the mandrel on which they are formed. So far, lead, stainless steel and mandrels plated with chromium, rhenium, silver and nickel-tin were being used in the production of sheet copper and other articles by the electroforming process. The commercial application of these mandrel materials frequently depends on variables other than the electrodeposition process environment, and therefore these materials have certain drawbacks: they fail to give (i) a pore-free foil, (ii) a shining mandrel surface, and (iii) reproducibility of copper foils of similar characteristics.

The process is based on the patentees' discovery that when a titanium mandrel is suitably pretreated chemically in an aqueous acidic solution prior to electroforming and when such a mandrel is used as a cathode in the electroforming bath, the electro-deposited material peels off with great ease from the mandrel without injury to either the mandrel or the electroformed article. The advantages of the process are: (1) the electroformed copper foils are free from pores; (2) the surface facing the mandrel is lustrous, smooth and shining; (3) the peeling off of the foil is made easy; (4) copper foils of similar surface finish are reproducible, (5) the foils obtained are free from wrinkles; and (6) the chemicals used are indigenously available and are cheap. □

*Accepted.

Indian Pat. 14/Del/77*

Improved process for electrodeposition of nickel-iron alloy coatings on metal substrates

B.A. SHENOI, (MRS) M. PUSHPAVANAM & (MRS) VIDYALAKSHMI
Central Electrochemical Research Institute Karaikudi

The patent covers the development of a new bath and brightener formulation for producing bright nickel-iron alloy coatings containing about 25% iron in the deposit. The coatings are comparable to pure bright nickel coatings in stress, levelling brightness, etc. The bath needs only half the nickel concentration required conventionally. Nearly one-tenth of the anode nickel is replaced by iron anode. The pure bright Watts solution can be easily converted to a bright nickel-iron alloy plating bath. With this plating technique it is possible to reduce nearly 30% cost of nickel plating. The coating takes chromium coating without any difficulty. □

PATENTS FILED

141/Del/80: An improved process for recovery of tin from tin scruff, V.A. Altekar, Prem Chand & D. Jha—NML, Jamshedpur.

662/Del/80: Improvements in or relating to immersion stripping of defective nickel electrodeposits from steel and stainless steel, H.V.K. Udupa, S.R. Natarajan, R. Krishnan & S. Sreeveeraraghavan—CECRI, Karaikudi. □

Nominations Invited

Hari Om Ashram Prerit Shri S.S. Bhatnagar Research Awards

The Central Salt & Marine Chemicals Research Institute (CSMCRI), Bhavnagar, has instituted Hari Om Ashram Prerit Shri S.S. Bhatnagar Awards for outstanding original research in each of the following areas: (i) Solar energy utilization in general, (ii) Desalination, and (iii) Prevention of water pollution in India. The first award, carrying a cash prize of Rs 5000, is for the year 1979, and the other two awards, carrying each a cash prize of Rs 2500, are for the year 1980.

The awards are open to Indian citizens. Work done within five years immediately preceding the year for which the award is made and up to 1980-81 will be considered.

Nominations for the award(s) may be submitted in prescribed proforma, with documentary evidence, to the Director, CSMCRI, Gijubhai Badheka Marg, Bhavnagar 364002 before 30 September 1981. Rules and regulations governing the awards, as also the prescribed proforma, may be obtained from the CSMCRI Director by sending a self-addressed stamped (Re 0.80) envelope (26.5 cm × 11 cm). □

*Accepted.

COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

ADVERTISEMENT NO. 21/81

It is proposed to appoint one Scientist F for the Central Leather Research Institute, Madras.

CLRI is a commodity-oriented institute carrying out both applied and fundamental work in the field of leather technology. The main areas of work of the institute are: (i) raw hides and skins; (ii) collagen; (ii) tanning agents and mechanism of tannage; (iv) tanning and finishing processes; (v) leather auxiliaries; (vi) footwear and leather goods; (vii) slaughterhouse byproducts; and (viii) leather trade engineering.

The institute has, besides the main laboratory at Madras, five extension centres in the country to disseminate knowledge and tackle problems on the spot. The institute also conducts university training and refresher courses in leather technology.

The prospective candidate should possess high academic qualifications in chemistry/chemical technology/leather technology and should have an established reputation of excellence in research and development and should also possess management capability of a high order. He should have a very good understanding of the technical problems of the leather industry in India. He will be required (i) to guide and evaluate research activities in leather technology, organize extension work, prepare plans and advise state governments and industrialists in setting up and running tanneries; (ii) to coordinate the activities of the extension centres, and sell research; and (iii) to assist the Director in his managerial tasks.

He should preferably be below 50 years in age but the age limit can be relaxed in deserving cases.

The salary scale is Rs 2000-125/2-2 allowances at Central Government rates initial pay can also be considered. T contractual appointment for a period of s The incumbent can also be confirmed conditions of contract will be supplied on

Scientists/Technologists interested ma two copies of the standard proforma for their *curriculum vitae* from the (Administration), Council of Scien Industrial Research, Rafi Marg, New 110001. They can also obtain a brochur aims and objects and the latest annual r the institute. Completed *curriculum* proforma should be received in this offic before 18 September 1981.

ADVERTISEMENT NO. 22/81

It is proposed to appoint one Scientist F Centre for Biochemicals, Vallabhai Pate Institute, Delhi.

The major areas of R&D work at the include: immunobiologicals including a utilization of slaughterhouse and other wa isolation of biochemicals, development clinical diagnostic kits, research on biol active ingredients from venoms, and develo of fine chemicals for basic research. The c engaged in preparation and marketing range of sophisticated research biochemic clinical diagnostic kits; and (iii) antige diagnosis and immunotherapy of disorders.

The prospective candidate should posse academic qualifications in biochem chemistry and should have an estab reputation of excellence in research development and production of biochemica management capability of a high order.

He will be expected to plan and guide re and production and marketing of re biochemicals and diagnostics, and developm new products. He will hold executive charge centre and will also be responsible for bu development. He should have the capabi substantially increasing the output and tu of the centre.

He should preferably be below 50 years but the age limit can be relaxed in deserving

The salary scale is Rs 2000-125/2-250 allowances at Central Government rates. I initial pay can also be considered. Thi contractual appointment for a period of six The incumbent can also be confirmed. conditions of contract will be supplied on re

Scientists/Technologists interested may two copies of the standard proforma for s their *curriculum vitae* from the (Administration), Council of Scientif Industrial Research, Rafi Marg, New 110001. Completed *curriculum vitae* pro should be received in this office on or bef September 1981.

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